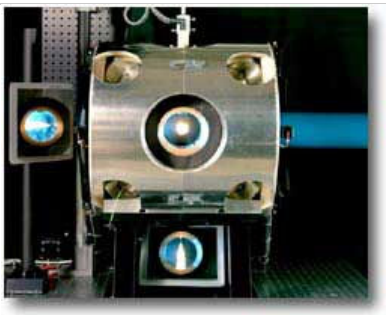
Engine Combustion Network

Constant-Volume Diesel Combustion



A wide range of ambient (charge-gas) environments can be simulated at the time of fuel injection in this facility, allowing the effect of each variable to be assessed. With full optical access, the following ambient conditions can be generated:

- Ambient gas temperatures from 450 K to 1300 K
- Ambient gas densities from 3 to 60 kg/m^3
- Ambient gas oxygen concentrations from 0% to 21%

These conditions span or exceed those typically experienced in a diesel engine.

Fuel is injected using common-rail fuel injectors with the following parameter range:

- Injection pressures above ambient from 40 to 200 MPa
- Nozzle sizes from 0.05 to 0.5 mm
- #2 diesel, single-component reference (n-heptane, cetane), and oxygenated fuels

The data obtained in this facility is useful for model development and validation because of the well-defined boundary conditions and the wide range of conditions employed. (Go to experimental data search).

Links at the left describe the methods for generating these conditions, the diagnostics applied, and the archival data acquired in the facility.

For further information, contact Web Grand Pooh-Bar
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